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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,327	12/02/2003	Katsura Ito	Q78609	2696

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EXAMINER

NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/725,327	ITO ET AL.	
	Examiner	Art Unit	
	Cam N Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on October 07, 2004 (an amendment/response).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' remarks and amendments, filed on October 07, 2004, have been carefully considered. Claim 18 has been amended.

Claims 1-19 remain pending in this application and under consideration.

Terminal Disclaimer

2. The terminal disclaimer filed on 10/07/04 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Pat. 6,683,023 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102(e)

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Taoda et al., "hereinafter Taoda", (US Pat. 6,090,736).

The applied reference has a common inventors (Ito and Hagihara) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Taoda discloses a photocatalytic powder for environment clarification, comprising finely divided titanium dioxide particles having a coating of porous calcium phosphate formed on at least part of the surface of each finely divided titanium dioxide particle, wherein an anionic surface active agent is present at least one the interface between said coating of porous calcium phosphate and the finely divided titanium dioxide particle (see col. 10, claim 1). The finely divided titanium dioxide particles have an average primary particle diameter of from about 0.001 μm to about 0.2 μm (see col. 10, claim 2). The finely divided titanium dioxide particles are in the form of a powder comprising primary dispersion particles produced by the gaseous phase reaction starting from a titanium halide (see col. 10, claim 3). The anionic surface active agent is disclosed at col. 4, ln 27-41. An aqueous slurry used for dispersing the finely divided titanium dioxide particles therein contains an anionic surface active agent and titanium dioxide particles (see col. 10, claim 6). Taoda further discloses when the finely divided titanium dioxide particle used supports onto the surface thereof a metal, such as platinum, rhodium, ruthenium, palladium, silver, copper, iron or zinc, the catalytic action of the

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metal further enhances the environmental clarification effect, such as decomposition-removal of organic compounds or killing of bacteria or molds (see col. 7, ln 10-15). The photocatalytic powder can be applied to a polymer shaped article, such as an organic fiber or a shaped plastic article, composed of an organic polymer. Suitable organic polymers including the claimed polymers (see col. 7, ln 16-32). Taoda further discloses a polymer composition comprising an organic polymer and about 0.01 to about 80% by weight, based on the weight of the polymer composition, of a photocatalytic powder for environmental clarification; said photocatalytic powder comprising finely divided titanium dioxide particles having a coating of porous calcium phosphate formed on at least part of the surface of each finely divided titanium dioxide particle, wherein an anionic surface active agent is present at least on the interface between said coating of porous calcium phosphate and the finely divided titanium dioxide particle (see col. 11- col. 12, claim 11).

Taoda discloses the claimed subject matter, thus anticipates the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taoda et al., "hereinafter Taoda", (US Pat. 6,090,736), as applied to claims 1-18 above, and further in view of Suzuki et al., "hereinafter Suzuki", (US Pat. 5,965,479).

Taoda discloses a photocatalytic powder as described above, except for the activated carbon and/or zeolite.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated such known activated carbon into the organic polymer of Taoda to achieve an improved organic polymer having enhanced in removing efficiency of harmful substances, as evidenced by Suzuki (see Suzuki at col. 1, ln 19-24). Specifically, Suzuki fairly discloses an activated carbon consisting essentially of activated carbon particle and titanium dioxide fine particles having an average particle size of not more than 10 μm , and containing a suitable binder, including thermosetting resins and the like (see Suzuki at col. 12, claim 1 & col. 8, ln 18-34).

Response to Arguments

7. Applicants' amendment/response filed on 10/07/04 has been fully considered, but not deemed persuasive for the following reasons.

Applicants urged, that the photocatalytic powder disclosed by the Taoda reference is different from that of the instant claims in that it contains a coating of porous calcium phosphate formed on at least part of the surface of each of finely divided titanium dioxide particles, etc. (applicants' response page 7). This is noted, but not found persuasive because the "porous calcium phosphate" of the Taoda reference is not being excluded in the instant claims or instant claim 1 due to the opening phrase "comprising" in the independent claim 1, line 2.

Applicants further urged, that “the Taoda reference does not indicate a control of the electrokinetic potential on the fine particles. As a result, the dispersion stability can not be resolved” (applicants’ response page 7, last paragraph). This is also noted, but not found persuasive because it is considered that the same photocatalytic powder material would be expected to give the same characteristics, such as the claimed electrokinetic potential properties. Thus, even though the reference is silent with respect to the photocatalytic powder properties, it is inherently met by the teaching of the reference.

It is the Examiner’s position to conclude that the claimed photocatalytic powder and that of the Taoda reference are the same, the rejection is still proper. Thus, the rejection is therefore maintained.

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Conclusion

9. Claims 1-19 are originally pending. Claims 1-19 are rejected. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (571) 272-1357. The examiner can normally be reached on M-F from 9:30 am. to 6:00 pm.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to telephone number (571) 272-1700.

Nguyen/cnn *cnn*

December 29, 2004

Cam Nguyen
CAM N. NGUYEN
PRIMARY EXAMINER

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